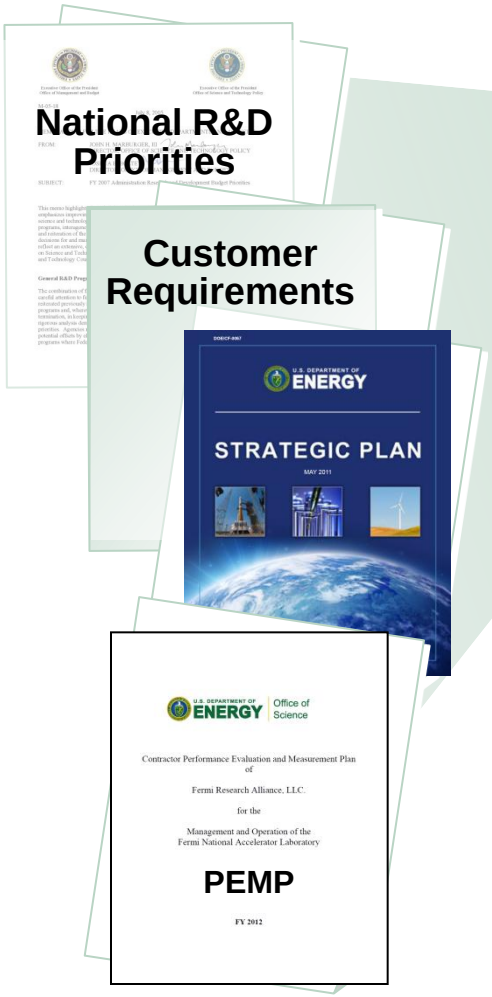
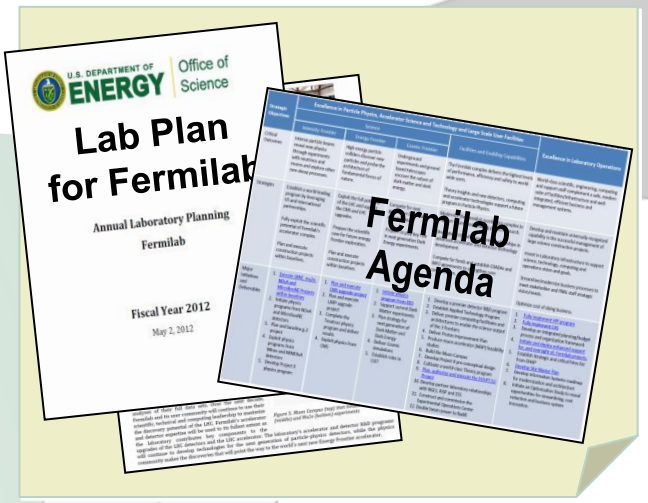
The planning model: an organizing principle for integration





Strategy and Planning

Align the business to deliver on strategy

- Budget/Business Planning (PEPs)
- Enterprise Risk Register development (Assurance Council)

Work Execution

Perform the work and business functions

- Execute Work
- Management Systems

Communication, Feedback, and Improvement

Identify improvement opportunities and inform business decisions

- Communicating Results
- Feedback Forums (e.g., EAG, Assurance Council…)
- Lessons Learned program
- Improvement Opportunities

Performance Monitoring and Analysis

Monitor, measure, and evaluate performance

- Performance Indicators (Fermidash)
- Integrated Assessment Plan
- Performance Analysis (Assurance Council/POG)
- Risk Register Review

A compelling vision…

"We have a compelling program that maintains Fermilab and the US as a leader in the world of particle physics --- and fits a leaner budget profile

Leadership includes working with the community and DOE to achieve that program, providing the facilities to pursue fundamental discoveries and attracting international partners

Leadership must take place in the context of a global field"

Intensity Frontier Workshop, Washington DC

U.S. DEPARTMENT OF ENERGY

Fermilab

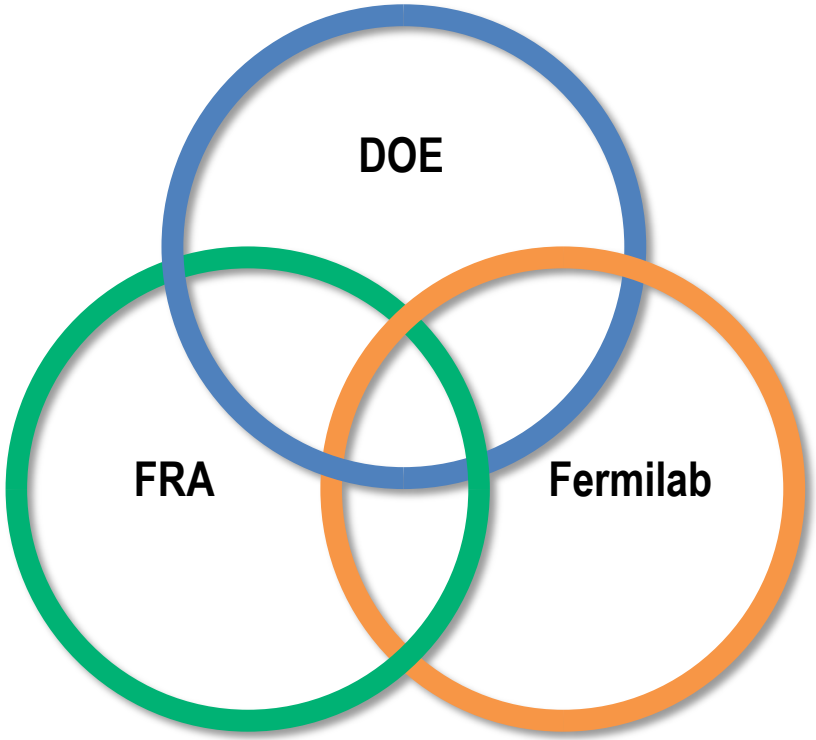
What does a successful strategy entail...?

- Drives world-leading physics
- Is supported by the HEP community
- Continually produces scientific results
- Attracts international participation
- Is resilient relative to instability in the US system
- Is resilient relative to new discoveries
- Has the full support of the Office of Science
- Is affordable (the definition of affordability varies with time, up and down)

Integrated Planning and performance management: A System Approach

- Characteristics
  - Maintaining a focus on mission outcomes
  - Maturing management systems/processes that drive improvements toward desired outcomes
  - Emphasis on self-identification, correction, and prevention
  - Demonstration of sustainable performance
  - Collective searching for opportunities to improve allocation of resources
  - The system can leverage 3rd party scrutiny
  - A climate of mutual trust that defines relationships and actions

Success depends on engagement of all 3 parties



The *"Fermilab Agenda"*

- A planning & communications framework that can:
  - align Lab strategic objectives, critical outcomes and major initiatives in major mission areas of science & operations
  - provide top-level basis for Program Execution Plans that flesh out annual actions and performance plans to make progress toward the strategic vision
  - keep the FRA proposal a living document (sustain good ideas, kill those not panning out, innovate new ideas)

Strategic Objectives	Excellence in Particle Physics, Accelerator Science and Technology and Large Scale User Facilities				Excellence in Laboratory Operations
	Science			Facilities and Enabling Capabilities	
	Intensity Frontier	Energy Frontier	Cosmic Frontier		
Critical Outcomes	Intense particle beams reveal new physics through experiments with neutrinos and muons and explore other rare-decay processes.	High energy particle colliders discover new particles and probe the architecture of fundamental forces of nature.	Underground experiments and ground based telescopes uncover the nature of dark matter and dark energy.	The Fermilab complex delivers the highest levels of performance, efficiency and safety to world-wide users. Theory insights and new detectors, computing and accelerator technologies support a future program in Particle Physics.	World-class scientific, engineering, computing and support staff complement a safe, modern suite of facilities/infrastructure and well-integrated, efficient business and management systems.
Strategies	Establish a world-leading program by leveraging US and international partnerships. Fully exploit the scientific potential of Fermilab's accelerator complex. Plan and execute construction projects within baselines.	Exploit the full potential of the LHC and support the CMS and LHC upgrades. Prepare the scientific case for future energy frontier exploration. Plan and execute construction projects within baselines.	Compete for next generation Dark Matter experiments. Prepare to play key role in next generation Dark Energy experiments.	Modernize the Fermilab accelerator complex to support future world leading physics research. Strengthen US and international partnerships in advanced accelerator and detector technology development. Compete for funds and establish CRADAs and WFO agreements to strengthen core competencies.	Develop and maintain universally recognized capability in the successful management of large science construction projects. Invest in Laboratory infrastructure to support science, technology, computing and operations vision and goals. Streamline/modernize business processes to meet stakeholder and FNAL staff strategic vision/needs. Optimize cost of doing business.
Major Initiatives and Deliverables	1. Execute LBNE, mu2e, NOvA and MicroBooNE Projects within baselines 2. Initiate physics programs from NOvA and MicrobooNE detectors 3. Plan and baseline g-2 project 4. Exploit physics programs from Minos and MINERvA detectors 5. Develop Project X physics program	1. Plan and execute CMS upgrade project 2. Plan and execute LARP upgrade project 3. Complete the Tevatron physics program and deliver results 4. Exploit physics from CMS	1. Initiate physics program from DES 2. Support current Dark Matter experiments 3. Plan strategy for next generation of Dark Matter and Dark Energy 4. Deliver Cosmic simulations 5. Establish roles in LSST	1. Develop a premier detector R&D program 2. Establish Applied Technology Program 3. Deliver premier computing facilities and architectures to enable the science output of the 3 frontiers 4. Grow world-class accelerator science and technology programs 5. Deliver Proton Improvement Plan 6. Produce MAP feasibility studies 7. Build the Muon Campus 8. Develop Project X pre-conceptual design 9. Cultivate a world-class Theory program 10. Plan, authorize and execute the (IUUP) SLI Project 11. Develop partner laboratory relationships with NGLS, RISP and ESS 12. Construct and commission the Experimental Operations Center 13. Double beam power to NuMI	1. Fully implement HPI program 2. Fully implement CAS 3. Develop an integrated planning/budget process and organization framework 4. Initiate and deploy enhanced support for, and oversight of, Fermilab projects. 5. Establish Strategic and critical hires list from OHAP 6. Develop Site Master Plan 7. Develop Information Systems roadmap for modernization and architecture 8. Initiate an Optimization Study to reveal opportunities for streamlining, cost reduction and business system innovation.

Strategic Objective	Excellence in Laboratory Operations
Critical Outcome	*World-class scientific, engineering, computing and support staff complement a safe, modern suite of facilities/infrastructure and well-integrated, efficient business and management systems.*
Strategies	• *Develop and maintain universally recognized capability in the successful management of large science construction projects.* • *Invest in Laboratory infrastructure to support science, technology, computing and operations vision and goals.* • *Streamline/modernize business processes to meet stakeholder and FNAL staff strategic vision/needs.* • *Optimize cost of doing business.*

Initiative:

Develop a site wide Master Plan that integrates the new vision for the Intensity Frontier facilities and other science with a sound strategy for infrastructure and support facility investment including facility modernization, stabilization, reutilization, demolition and consolidation efforts.

We are committed to the following outcomes:

Creating a site wide Master Plan to guide the efforts in development of the laboratory to most effectively and efficiently meet the future needs for Particle Physics:

- Integrate planning for scientific projects identified over the next 10 years
- Anticipate for consideration the possible scientific opportunities over next 20 years
- Identify infrastructure and support facility requirements supporting the scientific mission
- Identify opportunities for space elimination, consolidation, and repurposing.
- Propose additional capital projects and possible funding alternatives
- Develop architectural guidelines that preserve the legacy while complementing the future
- Integrate land stewardship, the natural environment, and sustainability
- Annual updates to the web-based Master Plan supporting lab planning and budget cycles

We are committed to the following milestones for FY 2013:

- Development of a project plan with plan of action and milestones (POA&M)
- Gain acceptance of POA&M from Master Planning Task Force
- Identify and interview Master Planning stakeholders
- Identify and brief the POA&M to interested universities for ideas and advice (Dec12/Jan13)
- Midyear progress review with interested parties (April 13)
- Delivery of the site wide Master Plan (Sept 13)

Responsibility: **Randy Ortgiesen, Gary Van Zandbergen, Steve Dixon,** Jack Anderson, The Fermilab Master Planning Task Force

Short, concise action plans that focus on outcomes and milestones

Sector Program Execution Plan Content and Layout

1. Sector Mission/Vision/Overview (integrates to Lab-level ALP)
2. Sector-at-a-Glance (Table, integrates to Lab-level ALP)
3. Sector Core Capabilities (SC defines) & Competencies (Table, integrates to Lab-level ALP)
4. (Sector) ***Science Strategies*** (FY14/15/16)
    a. Sector Strategies (w/ links to Lab Agenda strategies)
    b. Major initiatives and deliverables (Lab Agenda plus other Sector-level if any)
        i. Initiative (as applicable to Sector)
            1. FY14 Outcomes
            2. FY14 Milestones
            3. Responsibilities (lead, support)
5. (Sector) ***Facilities and Enabling Capabilities Strategies*** (FY14/15/16)
    a. Lab-level initiative (as applicable to Sector)
        i. FY14 Outcomes
        ii. FY14 Milestones/KPIs
        iii. Responsibilities (lead, support)
    b. (Sector) Buildings/Infrastructure Mission Needs & Readiness (table)
    c. (Sector) Potential significant changes (FY14/15/16)
6. (Sector) ***Laboratory Operations Strategies*** (FY14/15/16)
    a. Lab-level initiative (as applicable to Sector)
        i. FY14 Outcomes
        ii. FY14 Milestones/Key Performance Indicators)
        iii. Responsibilities (lead, support)
7. Sector Budgets ($ by B&R, table w/ FY14 and projected FY15/16)
8. Sector Staff (FTE, by B&R, table w/ FY14 and projected FY15/16
9. Sector Performance & Monitoring Plan (FY14)
    a. Sector KPI Summary (Table- metric/monitoring frequency/staff responsibility)
    b. Sector Risk Analysis (by KPI, Table – risk level, recommended mitigations & associated cost in FY 14/15/16
    c. Sector assessment plan (from Risk analysis)
        i. Self-assessments recommended/planned this year (consider risk analysis and other high-risk areas)
        ii. Independent assessments scheduled this year

Program Execution Plans align and translate strategy to action